

Application No. 10/814,982  
Amendment dated August 24, 2010  
Reply to Final Office Action dated June 7, 2010

Atty. Docket No. 043395-0377973

### **AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listings of claims in the Application.

1. (Currently Amended): An apparatus, comprising:  
a microfluidic trench to contain a target molecule, an array addressed device including a plurality of addressable cells, each of the plurality of addressable cells including at least two electrodes ;  
an electrochemical detector;  
and a Fourier transform infrared spectroscope optically coupled to the array addressed device, wherein the array addressed device is configured to detect bonding and/or lack-of-bonding of the target molecule to the array addressed device and wherein the plurality of addressable cells [[are]] is configured to function as a memory cell array, and wherein an infrared spectroscope signal from the infrared spectroscope is electromodulated by applying potential between the at least two electrodes in at least one of the plurality of cells.
2. (Cancelled): The apparatus of claim 1, wherein the spectroscope includes an infrared spectroscope.
3. (Cancelled) The apparatus of claim 2, wherein the infrared spectroscope includes a Fourier transform infrared spectroscope.
4. (Cancelled): The apparatus of claim 2, wherein an infrared spectroscope signal from the infrared spectroscope is electromodulated by applying potential between the at least two electrodes in at least one of the plurality of cells.
5. (Withdrawn): The apparatus of claim 2, wherein an infrared spectroscope signal from the infrared spectroscope is photo-modulated by applying a modulated UV-VIS signal to a surface of at least one of the at least two electrodes.